JMQWG Mtg #3
UAH Update

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Two Separate/Complimentary Initiatives

- Engineering effort in support of Direct Part Marking (JMQWG).
- Pilot UID effort at CCAD

Purpose

- Develop a standard to use for Direct Part Marking.
  - Requires material engineering
  - Construct a matrix for use across DoD
- Achieve a UID IOC at Depot.
- Implement and document a repeatable process for UID at CCAD.

DPM Engineering Effort

- Team
  - Blackhawk
  - Chinook
  - RDEC
  - UAH
- Catalog existing research and testing
  - Provide web based matrix of engineering data.
- Target Parts
  - Two from Blackhawk and Chinook
- Goals
  - AWR for target parts.
  - Define process for future efforts.
  - Material standards for use by OSD across services.
    - Sponsored by GEIA

Current Status

- Four Foot Stack 90% complete
  - PDF Files
- Sample Data Sheets
  - Change in direction
  - Move directly to an Access style relational DB.
  - Provides ease of access and searchability.

Sample DB Format

- Describe the part
  - Nomenclature
  - Fit in design configuration - functionality
  - Material design specifications
- Appropriate marking method
  - Documented standard
  - Documented specification
- Marking Failure Modes, Effects & Criticality Analysis
  - Failure mode of marking method
  - Failure effects of failure modes
  - Criticality and consequences of failure effects
- Certification of part marking airworthiness
  - Certification due to current understanding of marking method FMECA
  - Certification pending to understanding of marking method FMECA
- Test Plan to investigate failure mechanisms of marking method
  - Experimental approach to investigate failure mechanisms of marking method
  - Analysis of experimental findings of failure mechanisms
  - Certification action

Drop Down Sample

Material	Drop Down List
	Aluminum 2024
	Aluminum 7075 l1 N1 11
	Aluminum, 7075-T73, 60 ksi UTS
	Carbide Steel
	Carbon Steel
	Ceramic
	Composite
	Glass
	Inconel l2
	Magnesium
	Plastic
	Rubber
	Steel, 4340, 260 ksi UTS, Marked After Heat Treat
	Steel, 4340, 260 ksi UTS, Marked Before Heat Treat
	Titanium

Sample Drop Down

Method	Drop Down List
	Abrasive Blast (Flame Spray, HVOF)
	Cast / Mold
	Dot Peen
	Electro-Chemical Etch
	Forge / Mold
	Gas Assisted Laser Etch (GALE)
	Ink / Paint
	Laser Bond
	Laser Engrave
	Laser Etch
	Laser Induced Surface Improvement (LISI)
	Laser Shot Peen
	Micro-Mill
	Steel Stamp
	Thin Film Deposition
	Vibropeen
	Vibropeen (Not a Machine Readable Mark)

Program Status

- Four Foot Stack
  - December completion
- Workable Matrix DB
  - Jan 06
  - Out to JMQWG
- HALT Chamber
  - Lab under construction
  - Chamber delivery Nov (?)
- Testing Start
  - 30 days after delivery.